

(12) UK Patent Application (19) GB (11) 2 226 134 A

(43) Date of A publication 20.06.1990

(21) Application No 8927405.4

(22) Date of filing 04.12.1989

(30) Priority data

(31) 8828202

(32) 02.12.1988

(33) GB

(51) INT CL⁴

G08B 13/18 13/183, G01V 9/04

(52) UK CL (Edition K)

G1A AD10 AG1 AG11 AG4 AG6 AMQ AP15 AP16
AR7 AS10 AS12 AS4 AT15 AT27 AT3 AT8
U1S S2188

(71) Applicant

Thomas Lawrence Foulkes
7 Towngate, Leyland, Lancashire, PR5 1EN,
United Kingdom

(72) Inventor

Thomas Lawrence Foulkes

(74) Agent and/or Address for Service

Lloyd Wise Tregear & Co
Norman House, 105-109 Strand, London, WC2R 0AE,
United Kingdom

(56) Documents cited

GB 2108743 A EP 0281747 A2 WO 84/04986 A1
US 3987428 A US 3965355 A US 3898639 A
US 3825916 A US 3739372 A US 3711846 A
US 3688298 A US 3623057 A

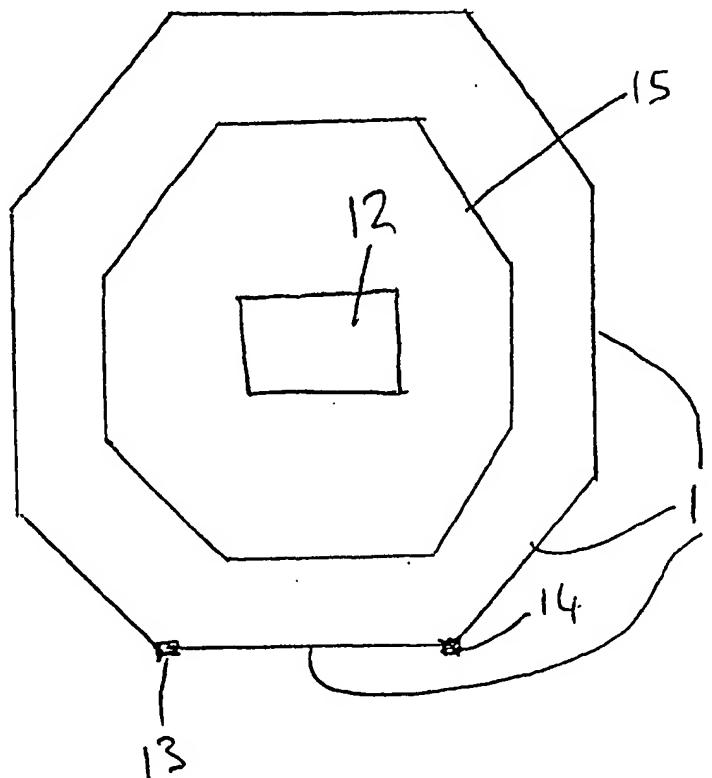
(58) Field of search

UK CL (Edition J) G1A AMQ
INT CL⁴ G01V, G08B

(54) Laser beam security barrier

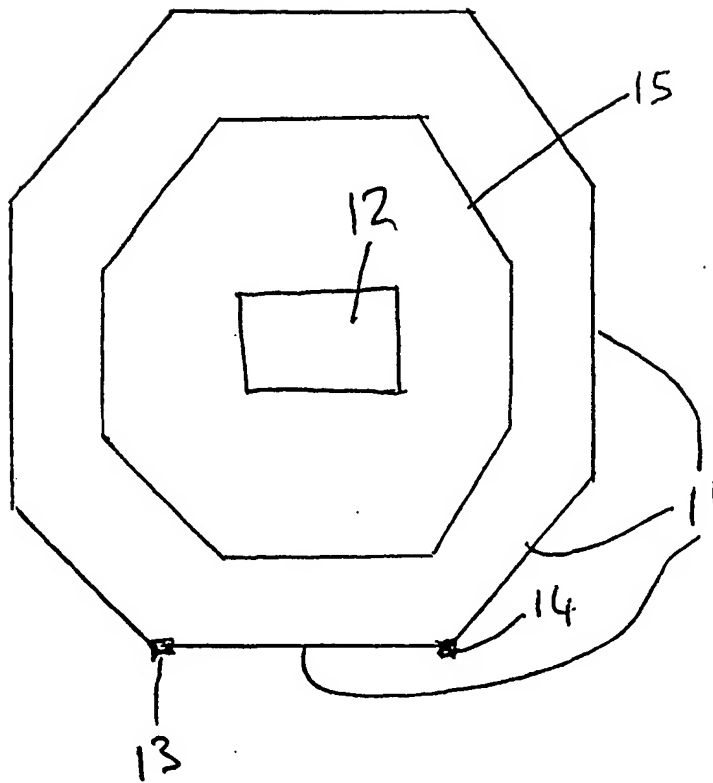
(57) The barrier is for a protected zone and is formed by a succession of laser beams 11 that are oscillated or traversed to generate a continuous curtain of protection along the perimeter of the zone.

A second laser beam barrier 15 is provided inside the perimeter protected by the first which second barrier is activated should the first be penetrated. The first barrier can be a visible light barrier for detection only while the lasers of the second barrier may be more powerful in order to deter or prevent further progress of the intruder.



GB 2 226 134 A

BEST AVAILABLE COPY



LASER SECURITY SYSTEM

This invention is intended to provide a system for the protection of high security areas such as nuclear storage, sensitive military zones, prisons and other areas where maximum security against unauthorised entry or exit is to be strictly imposed.

According to the invention, a laser beam security barrier or curtain is created along the boundary or boundaries of the zone or zones to be protected. This may be from ground level to the height dictated by the protection requirements but typically will be 10 metres.

The curtains can be continuous and any object passing through a curtain will immediately set off appropriate alarms. A second or third curtain could consist of more powerful pulsed lasers for the purpose of immobilising the unauthorised person entering.

Arrangements according to the invention will now be described, by way of example, with reference to the accompanying drawing which is a diagrammatic plan of perimeter security barriers for a building to be protected.

In the arrangement shown, a multiple series of visible laser beams 11 are aimed along the perimeter surrounding a building 12 to be protected and are adapted to oscillate or traverse by means of a system of vibrating or rotating mirrors 13, thus creating a continuous visible wall. Oscillating and rotating or otherwise complementarily traversing, receiving cells 14 continuously receive the laser beams even in fog conditions.

Should the receiving cells detect interruption in the laser light due to unauthorised entry the alarm will operate. Such lasers can be energised from both mains electrical and a battery back-up supply.

A second or third line of defence 15 can be a similar system of more powerful lasers only operating in the event of the first or second line of defence being broken. These lasers could be CO₂ gas lasers generating invisible beams and programmed to provide sufficient energy to deter any further progress of the intruder.

BEST AVAILABLE COPY

Lasers used in this way can easily be provided with a very high degree of in-built protection against unauthorised interference.

BEST AVAILABLE COPY

CLAIMS:

1. A laser beam security barrier along the boundary or boundaries of a zone or zones to be protected.
2. A security barrier according to Claim 1, comprising a
5 succession of laser beams that are oscillated or traversed to generate a substantially continuous curtain of protection, the beams being sensed by detectors that are oscillated or traversed in complementary fashion.
3. A security barrier according to Claim 1 or Claim 2,
10 wherein the laser beams are visible.
4. A security barrier according to any preceding claim, and having beyond it at least one further laser beam barrier comprised of more powerful lasers.
5. A security barrier system according to Claim 4,
15 wherein the further barrier is activated upon penetration of the first barrier.
6. A security barrier system substantially as described with reference to the accompanying drawing.

BEST AVAILABLE COPY